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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,648	04/30/2001	Menachem Levanoni	YOR920010396US1	2712

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EXAMINER	
PHAM, HUNG Q	

ART UNIT	PAPER NUMBER
2172	8

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/845,648	LEVANONI ET AL.	
	Examiner	Art Unit	
	HUNG Q PHAM	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 04/09/2004 have been fully considered but they are not persuasive.

(a) As argued by applicant on pages 8, line 1 to page 9, line 12:

> *The Examiner alleges that Tenma anticipates claims 1-7, 9, and 10, and, when combined with Elmasri, renders obvious claim 8, and when combined with Elmasri and Cragun, renders obvious claims 11 and 12.Applicants disagree. First, it is pointed out that, although the store gondolas of Tenma are arguably reasonably related in a generalized manner to the "department store" problem addressed by the present invention, the method used in Tenma is clearly not a "data mining technique", as one of ordinary skill in the art would understand that terminology...*
> *Applicants submit that the technique described in Tenma is not data mining, since this description would be inconsistent with the above-recited definitions. Using the expanded definition as seemingly applied in the rejection currently of record, "data mining" would be used to describe any process of optimization in which a calculator is used to automatically calculate an algorithm providing the end result.*

Examiner respectfully traverses because of the following reason:

As recited in new claims 13-15, the data mining techniques of claims 1, 9 and 10

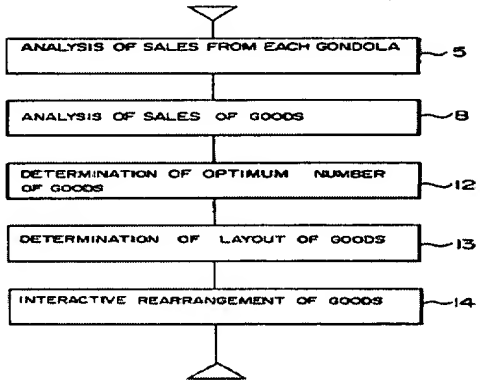
> ***comprises at least one of classification-neural; classification-tree; clustering-geographic; clustering-neural; factor analysis; principle component analysis; and expert system.***

As defined in the 4th Edition of Microsoft Computer Dictionary:

> `Data mining: the process of identifying commercially useful patterns or relationships in databases or other computer repositories through the use of advanced statistical tools.`

> *Expert system: An application program that makes decisions or solves problems in a particular field, such as finance or medicine, by using knowledge and analytical rules defined by experts in the field. It uses two components, a knowledge base and an inference engine, to form conclusion.*

Temma teaches a method and system for planning goods layout by using a knowledge base, which stores rules about the goods as in FIG. 1 (Col. 3, Lines 46-50). In order to plan goods layout, as shown in FIG. 2, the sales of goods from each gondola are analyzed in steps 5 and 8, the number of each of the goods is determined to optimize the sales efficiency of the goods in step 12. In step 13, on the basis of the rules stored in the knowledge base 14 and the information about the goods, a new layout of goods is determined (Col. 3, Line 51-Col. 5, Line 23).



As seen, the Temma technique as discussed indicates an expert system by using *an application program that makes decisions of* arranging goods on the gondolas in a store by using knowledge and analytical rules defined by experts and using two components, *a knowledge base and an inference*

`engine, to form conclusion`. Or in other words, the goods layout is planned by ***an expert system*** as ***a data mining technique***.

(b) As argued by applicant on page 9, lines 13-18:

> *That is, according to this expanded definition, one using a computer tool having the algorithm to automatically compute Federal income tax would be using "data mining" in the process of determining the desired "optimum" tax liability.*
> *It is noted that MPEP §2111 requires that: "The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach". (Emphasis by Applicants)*

Examiner respectfully traverses because the Temma technique of arranging goods on the gondolas in a store as discussed above is data mining technique by using `an application program that makes decisions of` arranging goods on the gondolas in a store by using knowledge and analytical rules defined by experts and using two components, `a knowledge base and an inference engine, to form conclusion` as further defined by applicant in claims 13-15, and cannot be improperly equated with *a computer tool having the algorithm to automatically compute Federal income tax* as stated by applicant. And by equating the Temma expert system with a data mining technique, examiner's interpretation still meets the requirement of MPEP § 2111.

(c) As argued by applicant on page 9, lines 1-7 and 1-22:

> *Even the reference by Elmasri et al., cited by the Examiner, defines "data mining" as: "... The mining or discovery of new information in terms of patterns or rules from vast amounts of data...*
> *Applicants submit that the technique described in Tenma is not data mining, since this description would be inconsistent with the above-recited definitions...*

Therefore, Applicants submit that Tenma would not reasonably be described by one of ordinary skill in the art as "data mining" unless this reference had, for example, described a data mining technique to discover the "rules" in the knowledge base 14 (e.g., lines 11-13 of column 5).

Examiner respectfully traverses because the rules in the knowledge base 14 is used to discover new information, and the applicant request of a description of discovering the rules in the knowledge database 14 to meet the requirement of the claimed ***data mining technique*** is improper.

(d) As argued by applicant on pages 10 and with respect to claims 8, 11 and 12:

Relative to the rejection for claim 8 and the urged modification in the rejection to employ "... neural networks for the rules in the knowledge base 14 in order to have a more user-friendly system", Applicants submit that, to one of ordinary skill in the art, this statement indicates considerable confusion on the part of its author.

Examiner respectfully traverses because the primary difference between an expert system and a neural network is that a neural network can adapt its criteria to better match the data it analyzes, while an expert system produces results without adjusting for changes in the analyzed data. And obviously, instead of using an expert system, a neural network could be used in order to have a better match of the data it analyzes.

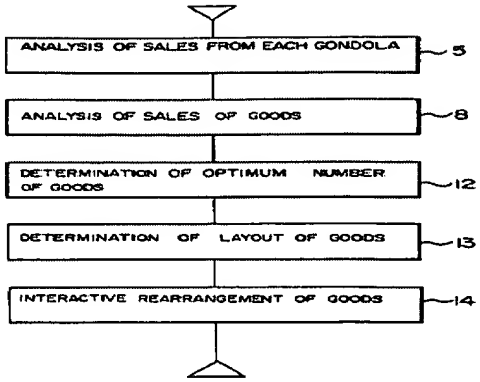
Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 9-10 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Temma et al. [USP 4,947,322].

Regarding to claims 1, 9 and 10, Temma teaches a method for planning goods layout. As shown in file 7 of FIG. 5 is the step of ***providing a department store space-requirements database comprising a compendium of individual department store space-requirements history***. As shown in file 4 of FIG. 3 is the step of providing ***a department store space-availability database comprising a compendium of at least one of department store space management solutions, department store space information,*** and ***department store space diagnostics***. As shown in FIGS. 1 and 2, the ***department store space-requirements database*** and ***department store space-availability database*** are analyzed in steps 5 and 8, the number of each of the goods is determined to optimize the sales efficiency of the goods in step 12. In step 13, on the basis of the rules stored in the knowledge base 14 and the information about the goods, a new layout of goods is determined (Col. 3, Line 51-Col. 5, Line 23).



As defined in the 4th Edition of Microsoft Computer Dictionary:

> *Expert system: An application program that makes decisions or solves problems in a particular field, such as finance or medicine, by using knowledge and analytical rules defined by experts in the field. It uses two components, a knowledge base and an inference engine, to form conclusion.*

As seen, the Temma technique as discussed indicates an expert system by using *an application program that makes decisions of* arranging goods on the gondolas in a store by using knowledge and analytical rules defined by experts and using two components, *a knowledge base and an inference engine, to form conclusion* as ***a data mining technique***, and a new layout of goods as ***an output data stream*** (Col. 3, line 51-Col. 5, line 23), or in other words, the Temma technique indicates the step of ***employing a data mining technique for interrogating a department store space-requirements and department store space-availability databases for generating an output data stream, said output data stream correlating department store space-requirements problem with department store space-availability solution***.

Regarding to claim 2, Temma teaches all the claimed subject matters as discussed in claim 1, Temma further discloses the step of ***updating the department store space-requirements database*** (Col. 5, lines 1-24).

Regarding to claim 3, Temma teaches all the claimed subject matters as discussed in claim 2, Temma further discloses the steps of ***updating the department store space-requirements database comprises including the results of employing a data mining technique*** (Col. 5, lines 1-24).

Regarding to claim 4, Temma teaches all the claimed subject matters as discussed in claim 1, Temma further discloses the step of ***updating the department store-space availability database*** (FIG. 3).

Regarding to claim 5, Temma teaches all the claimed subject matters as discussed in claim 4, Temma further discloses the step of ***updating the department store space-availability database comprises including the effects of employing a data mining technique on the department store space-requirements database*** (Col. 5, lines 1-24).

Regarding to claim 6, Temma teaches all the claimed subject matters as discussed in claim 2, Temma further discloses the step of ***refining an employed data mining technique in cognizance of pattern changes embedded in each database as***

a consequence of updating the department store space-requirements database (Col. 5, lines 1-24).

Regarding to claim 7, Temma teaches all the claimed subject matters as discussed in claim 4, Temma further discloses the step of ***refining an employed data mining technique in cognizance of pattern changes embedded in each database as a consequence of updating the department store space-availability database*** (Col. 5, lines 1-24).

Regarding to claims 13-15, Temma teaches all the claimed subject matters as discussed in claims 1 and 9-10, Temma further discloses ***the data mining technique comprises at least one of: classification-neural; classification-tree; clustering-geographic; clustering-neural; factor analysis; principal component analysis; and expert system*** (FIG. 2, Col. 3, Line 51-Col. 5, Line 23).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Temma et al. [USP 4,947,322] in view of Elmasri et al. [Fundamentals of Database Systems].

Regarding to claim 8, Temma teaches all the claimed subject matters as discussed in claim 1, but fails to teach the step of ***employing neural networks as the data mining technique***. Elmasri teaches neural networks could be employed as the

data mining technique (Elmasi, page 856). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Temma technique by employing neural networks for the rules in the knowledge base 14 in order to have a better match of the data it analyzes.

6. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Temma et al. [USP 4,947,322] in view of Elmasri et al. [Fundamentals of Database Systems] and Cragun et al. [USP 5,774,868].

Regarding to claim 11, Temma and Elmasri teaches all the claimed subject matters as discussed in claim 8, but does not explicitly disclose ***neural networks classify features of said department store-space requirements and features of said department store space availability***. Cragun teaches the technique of classifying the features of sale data (Col. 2, line 28-Col. 3, line 5). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Temma and Elmasri system and method by using neural networks to classify features in order to have a better match of the data it analyzes.

Regarding to claim 12, Temma, Elmasri and Cragun teaches all the claimed subject matters as discussed in claim 11, but does not explicitly disclose the step of ***determining whether a match exist between a classification of features of said department store space-requirement determined to be a problem and a***

classification of features of said department store space-availability. However, as taught by Temma, the rules to mine the data is based on if and then rules (Temma, FIG. 9, 12 and 21). As taught by Elmasri, neural networks could be employed to mine the data in a large database. Cragun teaches the technique of classifying the feature. It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Temma, Elmasri and Cragun technique by classifying the features of if and then rules and matching by using a neural network in order to have a better match of the data it analyzes.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q PHAM whose telephone number is 703-605-4242. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner Hung Pham
June 7, 2004

SHAHID ALAM
PRIMARY EXAMINER